



>>Entry Name: Pentachlorozincate(3-)

CAS Registry Number: 51018-44-1

Related CAS Registry Numbers(s): 33724-09-3

$[\text{ZnCl}_5]^{3(-)}$

Molecular Formula: $\text{Cl}_5\text{Zn}^{3(-)}$

Molecular Weight: 242.654

Accurate Mass: 238.773405

>>Derivative: Tri-Rb salt

CAS Registry Number: 38257-10-2

Molecular Formula: $\text{Cl}_5\text{Rb}_3\text{Zn}$

Molecular Weight: 499.057

Accurate Mass: 493.508787

Percentage Composition: Cl 35.52%; Rb 51.38%; Zn 13.10%

Physical Description: Cryst.

>>Derivative: Tri-Cs salt

CAS Registry Number: 20833-37-8

Molecular Formula: $\text{Cl}_5\text{Cs}_3\text{Zn}$

Molecular Weight: 641.37

Accurate Mass: 637.489692

Percentage Composition: Cl 27.64%; Cs 62.17%; Zn 10.20%

Source/Synthesis: Obtd. from fused CsCl and $\text{Cs}_2\text{Zn}_2\text{Cl}_4$

Physical Description: Cryst.

Melting Point: Mp 560°

Other Data: Isomorphous with Cs_2CoCl_5 and Cs_3ZnI_5

>>Derivative: Bis(diethylenetriamine)chromium(3+) salt

CAS Registry Number: 108786-83-0

Molecular Formula: $\text{C}_8\text{H}_{26}\text{Cl}_5\text{CrN}_6\text{Zn}$

Molecular Weight: 500.983

Accurate Mass: 496.935808

Percentage Composition: C 19.18%; H 5.23%; Cl 35.38%; Cr 10.38%; N 16.78%; Zn 13.05%

Physical Description: Lemon-yellow cryst. + $\frac{1}{2}\text{H}_2\text{O}$

Solubility: V. sol. H_2O , dil. acids; sol. DMF; insol. 2-propanol, Et_2O

>>Derivative: Hexaamminecobalt(3+) salt

CAS Registry Number: 25969-32-8

Physical Description: Orange cryst.

Other Data: Salt made up of $[\text{Co}(\text{NH}_3)_6]^{3(+)}$, $\text{Cl}^{(-)}$ and $\text{ZnCl}_4^{2(-)}$ (v. distorted tetrahedron)

>>Derivative: Tri- NH_4 salt

CAS Registry Number: 14639-98-6

Use/Importance: Used in soldering fluxes; fire retardant

Physical Description: White cryst.

Other Data: Salt made up of $\text{NH}_4^{(+)}$, $\text{Cl}^{(-)}$ and $\text{ZnCl}_4^{(-)}$ (regular tetrahedron) ions. Dec. to ZnCl_2 via $[\text{NH}_4]_2[\text{ZnCl}_4]$

References:

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Markov, B.F. *et al.*, *Ukr. Khim. Zh. (Russ. edn.)*, 1956, **22**, 287, (*phase diagram, Cs salt*)
Van Stapele, R.P. *et al.*, *J. Chem. Phys.*, 1966, **44**, 3719, (*Cs salt*)
Long, T.V. *et al.*, *Inorg. Chem.*, 1970, **9**, 459, (*synth, ir, Raman, Co salt*)
Meek, D.W. *et al.*, *Inorg. Chem.*, 1970, **9**, 465, (*cryst struct, Co salt*)
Scaife, D.E., *Aust. J. Chem.*, 1971, **24**, 1315, (*Cl-35 nqr, NH_4 and Co salts*)
Asker, W.J. *et al.*, *Aust. J. Chem.*, 1972, **25**, 2301, (*synth, Cl-35 nqr, Rb and NH_4 salts*)
Dunsmuir, J.T.R. *et al.*, *Spectrochim. Acta A*, 1972, **28**, 45, (*ir, NH_4 salt*)
Brown-Acquaye, H.A. *et al.*, *J. Inorg. Nucl. Chem.*, 1977, **39**, 2277, (*Raman, Cs salt*)
Ichuba, S. *et al.*, *Bull. Chem. Soc. Jpn.*, 1980, **53**, 3560, (*thermal anal, NH_4 salt*)
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